

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

STINGRAY IP SOLUTIONS, LLC,	§	
	§	
<i>Plaintiff,</i>	§	NO. 2:21-CV-00201-JRG
v.	§	(lead case)
LEGRAND, LEGRAND FRANCE, BTICINO SPA, and LEGRAND SNC,	§	NO. 2:21-CV-00202-JRG
	§	(lead case)
<i>Defendants.</i>	§	
<hr/>		
STINGRAY IP SOLUTIONS, LLC,	§	
	§	
<i>Plaintiff,</i>	§	NO. 2:21-CV-00193-JRG
v.	§	(member case)
AMAZON.COM, INC., and AMAZON.COM SERVICES LLC,	§	NO. 2:21-CV-00194-JRG
	§	(member case)
<i>Defendants.</i>	§	

CLAIM CONSTRUCTION MEMORANDUM OPINION AND ORDER

Stingray IP Solutions, LLC, (“Stingray”) alleges infringement by Amazon.com, Inc., and Amazon.com Services LLC (together, “Amazon”) of eight patents in two different proceedings. See Dkt. No. 74 at 1. One of the proceedings between Stingray and Amazon is Case No. 2:21-cv-00193-JRG, which was consolidated for pretrial purposes under lead Case No. 2:21-cv-00201-JRG. The other proceeding between Stingray and Amazon is Case No. 2:21-cv-00194-JRG, which was similarly consolidated for pretrial purposes under lead Case No.

2:21-cv-00202-JRG. Each of the asserted patents relates in some way to wireless networks.

For claim construction, however, the parties dispute the scope of terms from only five of the eight patents. Accordingly, the Court ordered a combined *Markman* hearing to simultaneously address claim construction issues in both proceedings. Dkt. No. 83. Four of the patents—U.S. Patents 6,961,310, 7,082,117, 7,027,426 and 7,616,961—relate to mobile ad hoc networks. '310 Patent at 1:6–8; '117 Patent at 1:7–9; '426 Patent at 1:6–8; '961 Patent at 1:6–8. The fifth patent, U.S. Patent 6,958,986, relates to “mobile communication systems operating with directional antennas.” '986 Patent at 1:20–22. Despite some inventorship and subject-matter overlap, none of the patents claim the benefit of a prior-filed application, and the disclosures are different.

The parties present five disputes for resolution. Having considered the parties’ briefing, along with arguments of counsel during a March 29, 2022 hearing, the Court resolves those disputes as follows.

I. BACKGROUND

A. U.S. Patent 6,958,986

The '986 Patent relates to “a network of mobile communication systems operating with directional antennas.” '986 Patent at 1:19–22. In particular, the patent introduces the notion of using directional (rather than omnidirectional) antennas in mobile communication systems with time division multiple access (TDMA) schemes, which assign each mobile device a specific time slot in which to communicate with other devices. *Id.* at 1:25–32. Because directional antennas increase the antenna gain in some directions and decrease the gain in others, “[s]cheduling time slots for wireless communication systems operating with directional antennas, particularly when the wireless communication systems are mobile, is complex.” *Id.* at 1:65–67.

To address this complexity, the '986 Patent teaches incorporating a controller in each of

the network’s nodes. The controller can schedule time slots for data based on priority levels and “link utilization metrics.” Thus, rather than adhering to a fixed TDMA scheme, the inventions allocate time slots to use available bandwidth most efficiently. *See generally id.* at 2:35–49.

B. U.S. Patent 6,961,310

The ’310 Patent is entitled “Multiple Path Reactive Routing in a Mobile Ad Hoc Network.” ’310 Patent at [54]. The patent describes a “mobile ad hoc network” as “a number of geographically-distributed, potentially mobile nodes wirelessly connected by one or more radio frequency channels.” *Id.* at 1:14–17. “The network is formed of mobile nodes only, and a network is created on the fly as the nodes transmit to or receive from other nodes.” *Id.* at 1:18–20. “The network does not in general depend on a particular node and dynamically adjusts as some nodes join and others leave the network.” *Id.* at 1:20–22.

The patent explains:

[d]ue to the lack of a fixed infrastructure, nodes must self-organize and reconfigure as they move, join or leave the network. All nodes could potentially be functionally identical and there may not be any natural hierarchy or central controller in the network. Many network-controlling functions are distributed among the nodes. . . . The bandwidth of the system is usually limited. The distance between two nodes often exceeds the radio transmission range, and a transmission has to be relayed by other nodes before reaching its destination. Consequently, a network has a multihop topology, and this topology changes as the nodes move around.

Id. at 1:32–45.

Because of the dynamic network topology, the routing protocols can be challenging. *See id.* at 1:56–60 (noting “routing in these networks is very different from others” and “[g]athering fresh information about the entire network is often costly and impractical”). There were, at the time of the underlying application’s filing date, conventional routing protocols that used a “best effort approach” to selecting a route between two nodes, often emphasizing the route with the

lowest number of hops as preferred. *See id.* at 2:12–18. Other methods used quality-of-service (QoS) metrics, such as bandwidth and reliability, in choosing the route between two nodes. *Id.* at 2:18–41. Regardless, the ’310 Patent criticizes the existing routing protocols as limited, and then purports “to provide more reliable and more timely routes with less traffic load concentration.” *Id.* at 2:53–56.

C. U.S. Patent 7,082,117

The ’117 Patent relates to intrusion detection for mobile ad hoc networks. *See ’117 Patent at [54].* Because “nodes in a mobile ad-hoc network all communicate wirelessly, there is a much greater risk of intrusion by unauthorized users.” *Id.* at 1:54–56. The patent suggests certain node characteristics might “reliably indicate whether a node is a rogue node attempting to intrude upon the network.” *Id.* at 2:18–21. In particular, the patent teaches using a “policing node” that monitors transmissions between the other network nodes and which generates an intrusion alert on the occurrence of certain conditions (*e.g.*, frame check sequence errors, failed attempts to authenticate MAC addresses, mode of operation) indicative of mischief. *Id.* at 2:34–49.

D. U.S. Patent 7,027,426; U.S. Patent 7,616,961

The ’426 Patent concerns *multi-channel* mobile ad hoc networks. ’426 Patent at [54]. As the Background of the Invention explains, “[c]onventional mobile ad-hoc network routing protocols assume that all nodes are on the same channel permanently[,] . . . which is a factor in the bandwidth availability.” *Id.* at 2:29–32. “Although some networks may use a separate control channel to reduce overhead on the transmission channel, conventional mobile ad-hoc networks do not utilize multiple channels for transmitting packet data.” *Id.* at 2:32–36. “The method includes sending a route request over each of the plurality of channels to discover routing to a destination node, and selecting a route to the destination node on at least one of the plurality of channels.” *Id.*

at [57].

The '961 Patent also relates to channel allocation. '961 Patent at [54]. In particular, the '961 Patent provides dynamic channel allocation by having each node monitor link performance, but scouting other available channels when the link performance falls below an acceptability threshold. *Id.* at [57].

II. LEGAL STANDARDS

A. Generally

“[T]he claims of a patent define the invention to which the patentee is entitled the right to exclude.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quoting *Innova/Pure-Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). As such, if the parties dispute the scope of the claims, the court must determine their meaning. *See, e.g., Verizon Servs. Corp. v. Vonage Holdings Corp.*, 503 F.3d 1295, 1317 (Fed. Cir. 2007); *see also Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 390 (1996), *aff’g*, 52 F.3d 967, 976 (Fed. Cir. 1995) (en banc).

Claim construction, however, “is not an obligatory exercise in redundancy.” *U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997). Rather, “[c]laim construction is a matter of [resolving] disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims” *Id.* A court need not “repeat or restate every claim term in order to comply with the ruling that claim construction is for the court.” *Id.*

When construing claims, “[t]here is a heavy presumption that claim terms are to be given their ordinary and customary meaning.” *Aventis Pharm. Inc. v. Amino Chems. Ltd.*, 715 F.3d 1363, 1373 (Fed. Cir. 2013) (citing *Phillips*, 415 F.3d at 1312–13). Courts must therefore “look to the words of the claims themselves . . . to define the scope of the patented invention.” *Id.* (citations

omitted). “[T]he ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application.” *Phillips*, 415 F.3d at 1313. This “person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.” *Id.*

Intrinsic evidence is the primary resource for claim construction. *See Power-One, Inc. v. Artesyn Techs., Inc.*, 599 F.3d 1343, 1348 (Fed. Cir. 2010) (citing *Phillips*, 415 F.3d at 1312). For certain claim terms, “the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words.” *Phillips*, 415 F.3d at 1314; *see also Medrad, Inc. v. MRI Devices Corp.*, 401 F.3d 1313, 1319 (Fed. Cir. 2005) (“We cannot look at the ordinary meaning of the term . . . in a vacuum. Rather, we must look at the ordinary meaning in the context of the written description and the prosecution history.”). But for claim terms with less-apparent meanings, courts consider “those sources available to the public that show what a person of skill in the art would have understood disputed claim language to mean[,] [including] the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art.”” *Phillips*, 415 F.3d at 1314 (quoting *Innova*, 381 F.3d at 1116).

B. Indefiniteness

“[A] patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those

skilled in the art about the scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014). “A patent must be precise enough to afford clear notice of what is claimed,” but that consideration must be made while accounting for the inherent limitations of language. *Id.* at 908–09. “Indefiniteness must be proven by clear and convincing evidence.” *Sonix Tech. Co. v. Publ’ns Int’l, Ltd.*, 844 F.3d 1370, 1377 (Fed. Cir. 2017).

III. THE LEVEL OF ORDINARY SKILL IN THE ART

The level of ordinary skill in the art is the skill level of a hypothetical person who is presumed to have known the relevant art at the time of the invention. *In re GPAC*, 57 F.3d 1573, 1579 (Fed. Cir. 1995). In resolving the appropriate level of ordinary skill, courts consider the types of and solutions to problems encountered in the art, the speed of innovation, the sophistication of the technology, and the education of workers active in the field. *Id.* Importantly, “[a] person of ordinary skill in the art is also a person of ordinary creativity, not an automaton.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007).

Here, the parties generally agree on the appropriate level of skill in the art at the time of invention. Stingray’s expert opines that a skilled artisan

would have completed an undergraduate degree in electrical engineering, computer science [or a similar field] and would have at least 3 years of professional experience in the field of wireless network communications. Alternatively, that person would have completed a graduate degree in electrical engineering, computer science, or similar field and would have at least 2 years of professional experience in the field of wireless network communications.

Jestice Decl., Dkt. No. 74-12 ¶ 13. Amazon’s expert concludes a skilled artisan “would have had at least a Bachelor’s degree in computer science, computer engineering, or a related discipline with an emphasis or concentration on computer communications networks, and two years of relevant industry experience related to wireless communications networks including ad hoc wireless

communications networks.” Jeffay Decl., Dkt. No. 74-11 ¶ 62. To the extent there are differences between these two proffered levels of ordinary skill, neither party argues the correct construction turns on resolving those differences.

IV. THE DISPUTED TERMS

A. “mobile ad hoc network” (’426 Patent, Claim 18; ’117 Patent, Claims 24, 55)

Plaintiff’s Construction	Defendants’ Construction
Preambles are not limiting.	Preambles are limiting.

Amazon contends the preambles of these claims are limiting, arguing each preamble recites essential structure “necessary to give life, meaning and vitality” to the claims and to capture what the inventors intended to encompass. Dkt. No. 80 at 5 (citing *Catalina Mktg. Int’l Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002), and *Corning Glass Works v. Sumitomo Elec. U.S.A., Inc.*, 868 F.2d 1251, 1257 (Fed. Cir. 1989)). Stingray disagrees. Dkt. No. 74 at 6–7.

“Whether to treat a preamble as a claim limitation is determined on the facts of each case in light of the claim as a whole and the invention described in the patent.” *Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 952 (Fed. Cir. 2006) (quoting *Storage Tech. Corp. v. Cisco Sys., Inc.*, 329 F.3d 823, 831 (Fed. Cir. 2003)). “Preamble language that merely states the purpose or intended use of an invention is generally not treated as limiting the scope of the claim.” *Id.* Similarly, “[i]f the body of the claim ‘sets out the complete invention,’ the preamble is not ordinarily treated as limiting the scope of the claim.” *Schumer v. Lab. Computer Sys., Inc.*, 308 F.3d 1304, 1310 (Fed. Cir. 2002). But the preamble is limiting if it recites essential structure that is important to the invention or necessary to give meaning to the claim. *NTP, Inc. v. Research In Motion, Ltd.*, 418 F.3d 1282, 1305–06 (Fed. Cir. 2005), *cert. denied*, 546 U.S. 1157 (2006). That is, if the claim drafter “chooses to use *both* the preamble and the body to define the subject matter of the claimed invention, the

invention so defined . . . is the one the patent protects.” *Bell Commc’ns Research, Inc. v. Vitalink Commc’ns Corp.*, 55 F.3d 615, 620 (Fed. Cir. 1995) (emphasis in original). Moreover, when the limitations in the body “rely upon and derive antecedent basis from the preamble, then the preamble may act as a necessary component of the claimed invention.” *Eaton Corp. v. Rockwell Int’l Corp.*, 323 F.3d 1332, 1339 (Fed. Cir. 2003).

1. ‘426 Patent, Claim 18

This claim recites:

- 18. A mobile ad hoc network comprising:
 - a plurality of mobile nodes; and
 - a plurality of wireless communication links connecting the plurality of mobile nodes together over a plurality of electrically separate wireless channels;
 - each mobile node comprising
 - a communications device to wirelessly communicate with other nodes of the plurality of nodes via the wireless communication links, and
 - a controller to route communications via the communications device, and comprising
 - a route discovery unit to transmit route requests over each of the plurality of electrically separate channels to discover routing to a destination node, and
 - a route selection unit to select a route to the destination node on at least one of the plurality of electrically separate channels.

‘426 Patent at 8:51–67.

This preamble is not limiting. Amazon contends the preamble “recites the essential elements of the claim that come together from the component parts in the body,” noting the claim specifically recites “a plurality of mobile nodes” and “a controller to route communications,” and

requires each node to have “a communications device to wirelessly communicate with other nodes.” Dkt. No. 80 at 9. Amazon argues these capabilities are distinct characteristics of a mobile ad hoc network (MANET) as described in the specification. *Id.* Amazon’s contentions, however, weigh against a limiting preamble because the allegedly distinct characteristics of the network are already recited in the body of the claim. If, as Amazon contends, the preamble “comes together from the component parts in the claim body,” Dkt. No. 80 at 9, the preamble is not essential to the claim. *See Schumer*, 308 F.3d at 1310 (“If the body of the claim ‘sets out the complete invention,’ the preamble is not ordinarily treated as limiting the scope of the claim.”).

2. '117 Patent, Claim 24

This claim recites:

24. A mobile ad-hoc network (MANET) comprising:
 - a plurality of nodes for transmitting data therebetween, said plurality of nodes intermittently operating in a contention-free mode during contention-free periods (CFPs) and in a contention mode outside CFPs; and
 - a policing node for detecting intrusions into the MANET by monitoring transmissions among said plurality of nodes to detect contention-free mode operation outside of a CFP; and
 - generating an intrusion alert based upon detecting contention-free mode operation outside a CFP.

'117 Patent at 14:6–17.

Amazon’s argument is based solely on the antecedent basis for “the MANET” provided by the preamble. Dkt. No. 80 at 7. However, antecedent basis alone is not enough to require finding a preamble limiting. Here, the claim clearly recites the elements of the network as “a plurality of nodes” and “a policing node,” with the latter followed by a statement of intended use—“for

detecting intrusions into the [network]”—rather than a structural limitation or requirement. This is not sufficient to find the preamble limiting.¹

3. *'117 Patent, Claim 55.*

This claim recites:

55. An intrusion detection method for a mobile ad-hoc network (MANET) comprising a plurality of nodes, the method comprising:

transmitting data between the plurality of nodes, the plurality of nodes intermittently operating in a contention-free mode during contention-free periods (CFPs) and in a contention mode outside CFPs;

monitoring transmissions among the plurality of nodes to detect contention-free mode operation outside of a CFP; and

generating an intrusion alert based upon detecting contention-free mode operation outside a CFP period.

'117 Patent at 17:43–18:2.

This claim’s preamble is limiting. First, the preamble provides antecedent basis for “the plurality of nodes,” which appears in two limitations as structure (rather than an intended use). Moreover, with the recitation of that structure, the preamble recites the essence of the invention—intrusion detection with respect to the plurality of nodes. Here, the applicant “[chose] to use *both* the preamble and the body to define the subject matter of the claimed invention” *Bell Commc’ns Research, Inc.*, 55 F.3d at 620 (Fed. Cir. 1995).

* * *

To summarize, the Court holds the preambles of Claim 18 of the '426 Patent and Claim 24

¹ Although Stingray disagrees that this preamble is limiting, it concedes the claim “is properly limited to application in a mobile ad hoc network” because the disputed term is used in the body of the claim. Dkt. No. 74 at 6–7 n.3.

of the '117 Patent are not limiting. The preamble of Claim 55 of the '117 Patent *is* limiting for the reasons set forth *supra*.

B. “mobile node” ('986 Patent, Claims 9, 25; '310 Patent, Claim 13; '961 Patent, Claim 1)

Plaintiff’s Construction	Defendants’ Construction
a device in a wireless communications network that can be moved	a mobile device connected to a network

Not surprisingly, this term is ubiquitous throughout the patents and their claims. Stingray contends its construction is consistent with the plain and ordinary meaning of the term and with its usage in the patents. Dkt. No. 74 at 9. Amazon criticizes Stingray’s construction as reading “on *any* device that can connect to a wireless network that *can* be moved.” Dkt. No. 80 at 14. Instead, Amazon contends the term has a well-understood meaning in networking and that “mobile” refers to a device that is *intended* to be used while in motion. *Id.* at 13.

Both constructions are flawed to some extent. Concerning Stingray’s construction, construing “mobile node” as a device that “can be moved” goes too far. As Amazon suggests,² with enough determination and money, almost anything can be moved. As for Amazon’s construction, “mobile device” is not used in the patents but carries with it a connotation of being limited to portable electronics. *See, e.g.*, <https://www.dictionary.com/browse/mobile-device> (last visited Apr. 10, 2022) (defining “mobile device” as “a portable, wireless computing device that is small enough to be used while held in the hand”). Yet nothing in the patents suggests the recited mobile *node* must be a “computing device” or “handheld computer.”

The proper construction lies somewhere in between. “Mobile” suggests the device can be

² Dkt. No. 80 at 14–15.

easily moved but does not necessarily mean the device is designed or intended to be used *while moving*. The Court therefore construes this term as “a readily movable device connected to a wireless network to be used while in motion or during stops at unspecified places.”

C. “neighboring mobile nodes” (’986 Patent, Claim 9)

Plaintiff’s Construction	Defendants’ Construction
Plain and ordinary meaning.	Mobile nodes that directly communicate.

This claim recites “[a] wireless communication network comprising:”

a plurality of mobile nodes each comprising a wireless transceiver and a controller for controlling said wireless transceiver, said controller comprising a data queue and also for scheduling respective semi-permanent time slots to establish communication links with *neighboring mobile nodes* for transmitting data stored in said data queues therebetween,

determining link utilization metrics for each communication link based upon a quantity of data previously sent over the communication link during the semi-permanent time slots and the data queue, and

scheduling demand assigned time slots for establishing additional communication links with said *neighboring mobile nodes* for transmitting the data based upon the link utilization metrics.

’986 Patent at 58:7–24 (emphasis added). The parties dispute whether “neighboring mobile nodes” are nodes that directly communicate with one another, or whether they are simply nodes within a certain proximity of one another.

Stingray asserts the latter. It says the patent uses the term in accordance with its plain and ordinary meaning, “where ‘neighboring’ generally refers to the proximity of nodes to each other.” Dkt. No. 74 at 12–13. “Neighboring mobile nodes,” says Stingray, “have locations within a proximate distance relative to each other. In other words, ‘neighboring mobile nodes’ are close to

each other in relation to non-neighboring nodes.” *Id.* at 13. It criticizes Amazon’s construction as improperly dependent on the communication status with other nodes. *Id.* at 15.

In support of its construction, Amazon cites excerpts from the specification and then concludes those excerpts define “neighbor nodes” as those which communicate directly and are attached to the same communication link. Dkt. No. 80 at 16–17. However, these excerpts establish that neighboring nodes *can* communicate with one another, but not that they *must* communicate with one another. That is, the excerpts on which Amazon relies are *not* definitional.

Nor does the extrinsic evidence on which Amazon relies support its construction. It cites industry documents entitled “Neighbor Discovery for IP Version 6 (IPv6)” as establishing “neighbor” nodes in wireless networking means “nodes attached to the same link.” Dkt. No. 80 at 17 (citing Dkt. No. 80-8 at 4, Dkt. No. 80-9 at 4). These same documents define “link” as “a communication facility or medium over which nodes *can* communicate at the link layer,” not “must communicate.” Dkt. No. 80-8 at 4; Dkt. No. 80-9 at 4. In fact, the documents relate to “neighbor discovery”—*i.e.*, “to discover each other’s presence, to determine each other’s link-layer addresses, to find routers and to maintain reachability information about the paths to *active* neighbors.” Dkt. No. 80-8 at 2; *see also* Dkt. No. 80-9 at 2. That clearly suggests a node can be a neighbor regardless of whether it is then directly communicating with another node—*i.e.*, whether it is “active.” This is consistent with the patent’s description of “establish[ing] a communication link with a neighboring mobile node,” *see, e.g.*, ’986 Patent at 11:1–2, thus implying an ongoing, active communication link is not necessary for a node to be “neighboring.”

The Court agrees that Stingray’s notion of proximity is sufficient when considered with the other technical requirements of a wireless network, such as range and frequency. Accordingly, the

Court construes this term as “mobile nodes that can directly communicate with one another.”³

**D. “electrically separate wireless channels” / “electrically separate channels”
('426 Patent, Claims 1, 18)**

Plaintiff's Construction	Defendants' Construction
“channels separated electrically by different frequencies, or by time slots or codes (e.g., TDMA or CDMA)”	“wireless channels transmitting at different radio frequencies”

This term appears numerous times these claims. For example, Claim 1 recites:

1. A method for operating a mobile ad hoc network comprising a plurality of wireless mobile nodes and a plurality of wireless communication links connecting the plurality of nodes together over a plurality of *electrically separate wireless channels*, the method comprising:
 - at a source node, sending a route request over each of the plurality of *electrically separate channels* to discover routing to a destination node;
 - at each intermediate node, determining whether the intermediate node can support the route requested and, if so, forwarding the route request to other intermediate nodes and the destination node over each of the plurality of *electrically separate channels*;
 - at the destination node, upon receiving the route request, generating a reply to the source node for each discovered route;
 - at the source node, selecting a route to the destination node on at least one of the plurality of *electrically separate channels*;
 - and

³ Amazon also contends that construing the term in a way that does not require “directly communicating” renders the term indefinite, because a skilled artisan would not know with reasonable certainty at what distances two mobile nodes are sufficiently close. Dkt. No. 80 at 17. Amazon, however, proffers no analysis for this conclusion based on the level of ordinary skill in the art, nor any extrinsic evidence supporting this contention.

at the source node, sending a transmission to the destination node along the selected route.

'426 Patent at 7:33–53; *see also id.* at 8:50–67 (Claim 18).

The issue is whether “electrically separate” can include Time Division Multiple Access (TDMA) and Code Division Multiple Access (CDMA). Stingray contends the applicant amended the claims to specifically include these. Dkt. No. 74 at 18. Amazon counters that the statement on which Stingray relies impermissibly broadens the claims contrary to the disclosure. Dkt. No. 80 at 25.

The prosecution history concerning this term is messy. In the final amendments before allowance, the applicant amended the preamble of Claim 1 to read: “A method for operating a mobile ad hoc network comprising a plurality of wireless mobile nodes and a plurality of wireless communication links connecting the plurality of nodes together over a plurality of ~~different~~ electrically separate wireless channels . . .” Amendments (Aug. 5, 2004), Dkt. No. 74-16 at 4 (Claim 1). The amendment also changed the scope of the channels in the limitations of Claim 1 and 18 to “electrically separate wireless channels.” *Id.*; *see also id.* at 8 (Claim 18). In accompanying remarks, the applicant specified that “electrically separate” includes frequency, TDMA, or CDMA. *Id.* at 13.

The examiner, however, pushed back. In his next communication, the examiner maintained the previous rejection and considered the applicant’s arguments about “electrically separate channels” unpersuasive:

Examiner finds [no] indication in the claims to imply that ‘electrically separate channels’ means ‘different frequency channels’, ‘separated by frequency’, ‘TDMA’ or ‘CDMA’. . . .^[4]

⁴ Stingray suggests the examiner found sufficient indication to imply the disputed term had these

...

Examiner respectfully disagrees and asserts, as clearly pointed out in the Office Action, the combination of the references to arrive [at] the claimed invention is proper. Perhaps Examiner shouldn't give to[o] much weight on the term "electrically separate channels" as argued by the Applicant in the response filed 08/05/04 because the disputed term "electrically separate[] channels" has no specific meaning in neither the claims nor the specification and it sure does not mean[] "different frequency channels", "separated by frequency", "TDMA" or "CDMA".

Final Office Action (June 28, 2005), Dkt. No. 80-6 at 13–14.

The applicant appealed. In his appeal brief, he made the same arguments concerning "electrically separate channels":

Appellant continues to disagree with the Examiner's characterization of the term "channel", especially in view of claim language setting forth the plurality of wireless communication links connecting the plurality of nodes together over the plurality of electrically separate channels. As pointed out by Appellant in the previous response, the term "electrically separate channels" includes separated by frequency, TDMA or CDMA, for example. Contrary to well established law on claim interpretation, the Examiner admits to giving the term no patentable weight

Appeal Br. (Oct. 11, 2005), Dkt. No. 82-3 at 5 (underlining in original)

The examiner never answered the appeal brief. Instead, he allowed the claims:

In a conventional mobile ad hoc network, the communication links between the nodes, through which the route request is sent, is contemplated being *same frequency channels*. On the contrary, the communication links between the nodes of the instant application exist over a plurality of channels having *different frequencies*. The invention is best described on page 10 in reference to Figure 1. At the aforementioned page, an excellent example of the distinct channels being different between source node S and intermediate nodes A–C is illustrated and

meanings, Dkt. No. 82 at 5, but the context of the examiner's comments suggest otherwise. The examiner prefaced this analysis with a statement characterizing the applicant's previous arguments as unpersuasive. Final Office Action, Dkt. No. 80-6 at 13.

described.

Notice of Allowability (Dec. 29, 2005), Dkt. No. 82-2 at 2 (emphasis added). The examiner also stated “the arguments in the outstanding response filed 10/11/05 are also incorporated in the reasons for allowance.” *Id.* at 3 (referring to the appeal brief).

Neither party proffers a “plain and ordinary meaning” of the term outside the context of this patent. Plaintiff’s expert does not opine on the term at all. *See* Jestice Decl., Dkt. No. 74-12 at i. Defendants’ expert deduces its meaning from a review of the specification, which does not use the term. *See, e.g.*, Jeffay Decl., Dkt. No. 74-11 ¶¶ 82–87. Even the examiner had difficulty understanding the term on its face. *See* Final Office Action, Dkt. No. 80-6 at 13–14 (noting “‘electrically separate[] channels’ has no specific meaning in neither the claims nor the specification”).

In the end, the Court is left with the applicant’s definition that “electrically separate channels” includes different frequencies, TDMA, and CDMA. A skilled artisan looking at the claims and seeing this term would have looked first to the specification for clarification (where the term is not used) and then to the prosecution history, where he would have found the applicant’s definition. Contrary to Defendants’ expert’s opinion about what the examiner concluded and why, Jeffay Decl., Dkt. No. 74-11 ¶ 87, the record does not reflect whether the examiner’s change of heart was based on the applicant’s definition for the term or something else. Notably, the examiner’s reasons for allowance are consistent with having accepted the applicant’s definition, especially considering his final statement that “the arguments in the outstanding [appeal brief] filed 10/11/05 are also incorporated in the reasons for allowance.” Notice of Allowability (Dec. 29, 2005), Dkt. No. 82-2 at 3.

Amazon relies on *Chimie v. PPG Indus., Inc.*, 402 F.3d 1371 (Fed. Cir. 2005), for the

proposition that a patentee cannot use the prosecution history to enlarge or vary the scope of claim limitations in a manner contrary to the specification. Dkt. No. 80 at 25. However, *Chimie* merely reiterates that, “[a]lthough the prosecution history can and should be used to understand the language used in the claims, it . . . cannot ‘enlarge, diminish, or vary’ *the limitations in the claims.*” *Chimie*, 420 F.3d at 1379–80 (quoting *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 980 (Fed. Cir. 1995)) (internal quotation marks omitted). In other words, contrary to Amazon’s suggestion, *Chimie* does not require the “proper” construction of a claim term to be within the boundaries of the specification.⁵

Amazon correctly notes the scope of the claims must, in the end, be supported by the specification, but that is a “written description” issue rather than one of claim construction.

[T]he focus of claim construction remains on defining a discrete claim term to better ascertain the boundaries of a claim. In contrast, the written description analysis considers the bounds of the specification itself. The written description requirement prevents patentees from claiming more than they have actually invented and disclosed to the public, as measured by the written description of the invention provided with their patent applications.

⁵ *Chimie* is distinguishable on the facts as well. The district court construed “dust-free and non-dusting” based on a specific “dustiness” standard set forth in the specification. *Chimie*, 402 F.3d at 1375. The appellant challenged that construction on the grounds that the amount of dust could be assessed using a “pour test” at which the disclosure only hinted. *See id.* at 1379. According to the appellant, the results of the pour test, which appeared in the patent only as pictures, could distinguish the level of dust produced by the invention from the prior art and therefore it was inappropriate to limit the term “dust-free and non-dusting” to the standard expressly recited in the specification. *See id.* In support of this interpretation, the appellant heavily relied on statements made during prosecution that the pictures were evidence of the “non-dusting and free-flowing properties.” *Id.* The court rejected this argument, concluding the applicant chose to define the term only by reference to characteristics of the prior art, which in turn were explained according to the standard set forth in the specification. *Id.* at 1380. In contrast to *Chimie*, the prosecution-history statements here were clearly definitional, and the term was not used in the specification.

Trading Techs. Int'l, Inc. v. Open E Cry, LLC, 728 F.3d 1309, 1319 (2013).

Lexicography is clear in this case. The applicant inserted a phrase into the claims during prosecution and contemporaneously defined the meaning of that phrase in his remarks. Those amendments were eventually accepted by the Office, and it is the Court's role at this stage of the proceeding to give meaning to the disputed phrase, regardless of whether it is later found to be supported by the written description or not. Accordingly, the Court adopts Stingray's construction for this term.

E. “at each node, monitoring link performance on a first channel, link performance being based on at least one quality of service (QoS) threshold” / “at each node, scouting one or more other available separate channels at different frequencies when the monitored link performance on the first channel falls below the QoS threshold” ('961 Patent, Claim 1)

Plaintiff’s Construction	Defendants’ Construction
Not indefinite.	Indefinite under 35 U.S.C. § 112

Claim 1 recites “a method for dynamic channel allocation in a mobile ad hoc network, the method comprising:”

at each node, monitoring link performance on a first channel, link performance being based upon at least one quality of service (QoS) threshold;

at each node, scouting one or more other available separate channels at different frequencies when the monitored link performance on the first channel falls below the QoS threshold by at least switching to a second separate channel at a different frequency, broadcasting a channel activity query to determine link performance for the second separate channel, and processing replies to the channel activity query to determine the link performance for the second separate channel; and

at each node, updating respective channel activity for the first and second separate channels at different frequencies based upon the processed replies.

'961 Patent at 15:25–47.

Amazon challenges the first two limitations—“monitoring link performance” and “scouting one or more other available separate channels”—as indefinite. Specifically, Amazon argues that neither the claims nor the specification provides any objective boundaries for determining the meaning of these limitations. Amazon suggests the same analysis used in *Intellectual Ventures I, LLC v. T-Mobile USA, Inc.*, 902 F.3d 1372 (Fed. Cir. 2018), applies here. Dkt. No. 80 at 27.

In *Intellectual Ventures I*, the limitation at issue recited “allocating resources to said IP flow . . . so as to optimize end user application IP QoS requirements of said software application.” *Intellectual Ventures I*, 902 F.3d at 1381. The court concluded “optimiz[ing] . . . QoS” is a term of degree that depends ‘on the unpredictable vagaries of any one person’s opinion.’” *Intellectual Ventures I*, 417 F.3d at 1350–51. In other words, the issue was not the values of the QoS measures, but how to determine whether the QoS requirements were “optimized.”

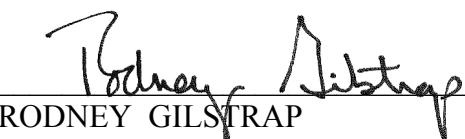
Here, the claim language does not include a subjective step. Rather, the limitations in question only require monitoring link performance and scouting other available networks. The second limitation happens when the monitored link performance in the first channel falls below the “QoS threshold,” and there is an objective measure for when that happens even though the claim does not limit what that threshold must be. Dkt. No. 80 at 26. These limitations are not indefinite.

V. CONCLUSION

Term	The Court's Construction
The preambles ('426 Patent, Claims 18; '117 Patent, Claims 24, 55)	The preambles of Claim 18 of the '426 Patent and Claim 24 of the '117 Patent are not limiting. The preamble of Claim 55 of the '117 Patent is limiting.
"mobile node" ('986 Patent, Claims 9, 25; '310 Patent, Claim 13; '961 Patent, Claim 1)	"a readily movable device connected to a wireless network to be used while in motion or during stops at unspecified places"
"neighboring mobile nodes" ('986 Patent, Claim 9)	"mobile nodes that can directly communicate with one other"
"electrically separate wireless channels" / "electrically separate channels" ('426 Patent, Claims 1, 18)	"channels separated electrically by different frequencies, or by time slots or codes (e.g., TDMA or CDMA)"
"at each node, monitoring link performance on a first channel, link performance being based on at least one quality of service (QoS) threshold" / "at each node, scouting one or more other available separate channels at different frequencies when the monitored link performance don the first channel falls below the QoS threshold" ('961 Patent, Claim 1)	Not indefinite.

The Court **ORDERS** each party not to refer, directly or indirectly, to its own or any other party's claim construction positions in the presence of the jury. Likewise, the Court **ORDERS** the parties to refrain from mentioning any part of this opinion, other than the actual positions adopted by the Court, in the presence of the jury. Neither party may take a position before the jury that contradicts the Court's reasoning in this opinion. Any reference to claim construction proceedings is limited to informing the jury of the positions adopted by the Court.

So ORDERED and SIGNED this 14th day of April, 2022.



RODNEY GILSTRAP
UNITED STATES DISTRICT JUDGE